






Human Interleukin 24 Specific IgE, IL-24 SIgE ELISA

REF : KBH4792

Ver 2.0

RUO

Enzyme Immunoassay for the Quantitative Determination of Human Interleukin 24 Specific IgE, IL-24 SIgE in human serum, plasma and other biological samples.

RUO	For Research Use Only	REF	Catalog Number
	Store At	LOT	Batch Code
	Manufactured By		Biological Risk
	Expiry Date		Consult Operating Instructions

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Introduction:

The GENLISA™ ELISA kits are used for assessing the specific biomarker in samples analytes which may be serum, plasma and cell culture supernatant as validated with the kit. The kit employs a sandwich ELISA technique which leads to a higher specificity and increased sensitivity compared to conventional competitive ELISA kits which employ only one antibody. Double antibodies are used in this kit.

Intended Use:

The Human Interleukin 24 Specific IgE, IL-24 sIgE GENLISA™ ELISA kit is used as an analytical tool for quantitative determination of Human Interleukin 24 Specific IgE, IL-24 sIgE in serum, plasma and other biological samples

Principle:

The method employs sandwich ELISA technique. Monoclonal antibodies are pre-coated onto microwells. Samples and standards are pipetted into microwells and Human Interleukin 24 Specific IgE, IL-24 sIgE present in the sample are bound by the antibodies. Biotin labeled antibody is added and followed by Streptavidin-HRP is pipetted and incubated to form a complex. After washing microwells in order to remove any non-specific binding, the substrate solution (TMB) is added to microwells and color develops proportionally to the amount of Human Interleukin 24 Specific IgE, IL-24 sIgE in the sample. Color development is then stopped by addition of stop solution. Absorbance is measured at 450 nm.

Materials Provided:

1. Microtiter Coated Plate (12X8 wells) – 1 no
2. Standard Human IL-24 (concentrated, 160ng/ml; lyophilized) – 1 vial
3. Human IL-24 Biotin Conjugated Detection Antibody (18 ug/ml; lyophilized) – 1 vial
4. Concentrated Streptavidin Horseradish Peroxidase - 1 vial
5. (20X) Wash Buffer – 25ml
6. Assay Diluent – 50ml
7. TMB Substrate – 12ml
8. Stop Solution – 12ml
9. Instruction Manual

Materials to be provided by the End-User:

1. Microplate Reader able to measure absorbance at 450nm.
2. Adjustable pipettes to measure volumes ranging from 50 ul to 1000 ul.
3. Deionized (DI) water.
4. Wash bottle or automated microplate washer.
5. Graph paper or software for data analysis.
6. Tubes to prepare standard/sample dilutions.
7. Timer.
8. Absorbent paper.

Storage Information:

1. Store main kit components at 2-8°C.
2. Store recombinant **Standard at 2-8°C**. After reconstitution aliquot recombinant protein into polypropylene vials and store at -20°C as per assay requirements. Do not freeze thaw for more than two times.
3. Before using, bring all components to room temperature (18-25°C). Upon assay completion return all components to appropriate storage conditions.

Health Hazard Warnings:

1. Reagents that contain preservatives may be harmful if ingested, inhaled or absorbed through the skin. Refer to the MSDS online for details.
2. To reduce the likelihood of blood-borne transmission of infectious agents, handle all serum and/or plasma in accordance with NCCLS regulations.

Specimen Collection and Handling:

Specimens should be clear and non-hemolyzed. Samples should be run at a number of dilutions to ensure accurate quantitation.

Cell Culture Supernatant: If necessary, centrifuge to remove debris prior to analysis. Samples can be stored at temperature < -20°C. Avoid repeated freeze/thaw cycles.

Serum: Use a serum separator tube and allow clotting for 30 minutes, then centrifuge for 10 minutes at 1000 x g. Remove serum layer and assay immediately or store serum samples at temperature < -20°C. Avoid repeated freeze/thaw cycles.

Plasma: Collect blood sample in a citrate, heparin or EDTA containing tube. Centrifuge for 10 minutes at 1000 x g within 30 minutes of collection. Assay immediately or store plasma samples at temperature < -20°C. Avoid repeated freeze/thaw cycles.

Reagent Preparation:

Please refer to lot specific instructions for preparation of the reagents.

Assay Procedure:

1. Bring all reagents to room temperature prior to use. It is strongly recommended that all standards and samples be run in duplicates. A standard curve is required for each assay.
2. Standards Preparation: Reconstitute lyophilized standard with 50ul Distilled water to get a concentration of 160ng/ml. Add 25ul of reconstituted standard (160ng/ml) with 475ul of Assay Diluent to generate 8000pg/ml. Prepare the Standards stock by diluting as per the below table. Thus the Human IL-24 Standard concentrations are 8000pg/ml, 4000pg/ml, 2000pg/ml, 1000pg/ml, 500pg/ml, 250pg/ml and 125pg/ml. Assay Diluent serves as the zero standards (0 pg/ml).

Standard Concentration	Standard No	Dilution Particulars
160 ng/ml	Standard, lyophilized	Original Standard provided in the Kit + 50ul Distilled water
8000 pg/ml	Standard No.7	25 ul Reconstituted Standard + 475 ul Assay diluent
4000 pg/ml	Standard No.6	250 ul Standard No.7 + 250 ul Assay diluent
2000 pg/ml	Standard No.5	250 ul Standard No.6 + 250 ul Assay diluent
1000 pg/ml	Standard No.4	250 ul Standard No.5 + 250 ul Assay diluent
500 pg/ml	Standard No.3	250 ul Standard No.4 + 250 ul Assay diluent
250 pg/ml	Standard No.2	250 ul Standard No.3 + 250 ul Assay diluent
125 pg/ml	Standard No.1	250 ul Standard No.2 + 250 ul Assay diluent

3. Add 100ul of **Standards** and **Samples** to the plate, Seal plate and incubate for 2 hours at Room temperature (RT).

4. Aspirate and wash plate 4 times with **Wash Buffer (1X)** and blot residual buffer by firmly tapping plate upside down on absorbent paper. Wipe of any liquid from the bottom outside of the microtiter wells as any residue can interfere in the reading step. All the washes should be performed similarly.
5. Add 100ul of **Prepared Detection Antibody** to the plate, Seal plate and incubate for 2 hours at Room temperature (RT).
6. Aspirate and wash plate 4 times with **Wash Buffer (1X)** and blot residual buffer by firmly tapping plate upside down on absorbent paper. Wipe of any liquid from the bottom outside of the microtiter wells as any residue can interfere in the reading step. All the washes should be performed similarly.
7. Add 100ul of diluted **Streptavidin-HRP** solution to each well, seal plate and incubate for 30 minutes at Room temperature (RT).
8. Wash plate 4 times with **Wash Buffer (1X)** as in step 4.
9. Add 100ul of **TMB Substrate** solution and incubate in the dark for 30 minutes at Room temperature (RT).
10. Positive wells should turn bluish in color. It is not necessary to seal the plate during this step.
11. Stop reaction by adding 100ul of **Stop Solution** to each well. Positive wells should turn from blue to yellow.
12. Read absorbance at 450 nm within 30 minutes of stopping reaction.

Calculation of Results:

Determine the mean absorbance for each set of duplicate standards and samples. Subtract the mean absorbance of the zero standards (background) from each well. Plot the standard curve on standard graph paper, with cytokine concentration on the x-axis and absorbance on the y-axis. Draw the best fit straight line through the standard points. To determine the unknown cytokine concentrations, find the unknowns mean absorbance value on the y-axis and draw a horizontal line to the standard curve. At the point of intersection, draw a vertical line to the x-axis and read the cytokine concentration. If samples were diluted, multiply by the appropriate dilution factor.

Computer based curve-fitting software may be preferred. Software which is able to generate a cubic spline curve-fit or a polynomial regression to the 2nd order is best recommended for automated results.

Performance Characteristics:

Please note that this validation is performed in our laboratory and will not necessarily be duplicated in your laboratory. This data has been generated to enable the user to get a preview of the assay and the characteristics of the kit and is generic in nature. We recommend that the user performs at the minimum; the spike and recovery assay and the dilutional linearity assay to assure quality results. For a more comprehensive validation, the user may run the protocols as suggested by us herein below to develop the parameters for quality control to be used with the kit.

Sensitivity:

Limit Of Detection: It is defined as the lowest detectable concentration corresponding to a signal of Mean of '0' standard plus 2* SD. 10 replicates of '0' standards were evaluated and the LOD was found to be 110 pg/ml.

Specificity:

The antibodies used in the kit for capture and detection are monoclonal antibodies specific for Human IL-24

Assay Range:

125 pg/ml to 8000 pg/ml.

Precision:

Intra-Assay: CV<10%

Inter-Assay: CV<12%

Linearity:

The linearity of the kit was assayed by testing samples spiked with appropriate concentration of Human IL-24 and their serial dilutions. The results were demonstrated by the percentage of calculated concentration to the expected.

Sample	1:2	1:4	1:8
serum (n=5)	84-107%	87-108%	82-112%
EDTA plasma (n=5)	83-102%	83-115%	83-118%
heparin plasma (n=5)	83-99%	80-95%	82-93%

Quality Control:

It is recommended that for each laboratory assay appropriate quality control samples in each run to be used to ensure that all reagents and procedures are correct.

Safety Precautions:

- **This kit is for research use only.** Follow the working instructions carefully.
- The expiration dates stated on the kit are to be observed. The same relates to the stability stated for reagents
- Do not use or mix reagents from different lots.
- Do not use reagents from other manufacturers.
- Avoid time shift during pipetting of reagents.
- All reagents should be kept in the original shipping container.
- Some of the reagents contain small amount of sodium azide (< 0.1 % w/w) as preservative. They must not be swallowed or allowed to come into contact with skin or mucosa.
- Source materials maybe derived from human body fluids or organs used in the preparation of this kit were tested and found negative for HBsAg and HIV as well as for HCV antibodies. However, no known test guarantees the absence of such viral agents. Therefore, handle all components and all patient samples as if potentially hazardous.
- Since the kit contains potentially hazardous materials, the following precautions should be observed
 - Do not smoke, eat or drink while handling kit material
 - Always use protective gloves
 - Never pipette material by mouth
 - Wipe up spills promptly, washing the affected surface thoroughly with a decontaminant.
- In any case GLP should be applied with all general and individual regulations to the use of this kit.

**LIMITED WARRANTY**

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SYMBOLS KEY

MTP	Microtiter Coated Plate (12x8 wells)
STD	Human IL-24 Standard (lyophilized)
BIO CONJ	Biotin Conjugated Detection Antibody
STRP HRP	Streptavidin Horseradish Peroxidase
ASY DIL	Assay Diluent
20X WASH BUF	(20X) Wash Buffer
SUB TMB	TMB Substrate
SOLN STOP	Stop Solution
	Consult Instructions for Use
REF	Catalogue Number
	Expiration Date
	Storage Temperature